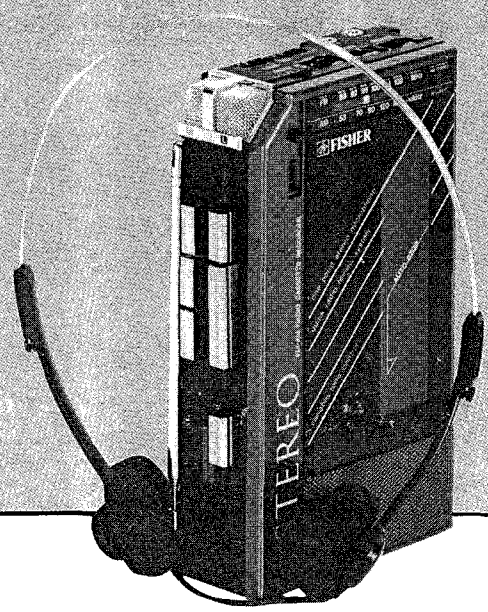
SERVICE MANUAL

FISHER

PH 70

Mini Stereo Radio Cassette Recorder

(EUROPE)



THE FIRST NAME IN HIGH FIDELITY

SPECIFICATIONS

Power Source	
DC	6V
(HP 7, Mignonzelle, R 6) x 4	
Output Power	
Headphone	50mW x 2 (Max.)
Speaker	700mW (Max.)
Current Consumption (at Vol. Min.)	
Record mode	220mA
Playback mode	180mA
Fast Forward mode	230mA
Rewind mode	260mA
Recording System	AC Bias
Erasing System	Magnet Erasing
Tape Speed (Normal)	1-7/8ips. ±3%
Fast	+20%
Slow	−10%
Fast Forward Time	150sec. (with C-60)
Rewind Time	150sec. (with C-60)
Torque	
Playback	35 ~ 55g-cm
Fast Forward	more than 55g-cm
Rewind	more than 55g-cm
Wow & Flutter	0.5%, RMS
Frequency Response (Overall)	
Fe_2O_3	
Headphone	40 ~ 10,000Hz
Speaker	200 ~ 6,000Hz
Metal	
Headphone	40 ~ 12,000Hz
Speaker	200 ~ 6,000Hz
Erase Ratio (Overall, with Fe_2O_3)	more than 50dB
Signal to Noise Ratio (with Fe_2O_3)	more than 40dB
Crosstalk (with Fe_2O_3)	
Track to Track	more than 55dB
Channel Separation (with Fe_2O_3)	more than 23dB
Harmonic Distortion (K3, with Fe_2O_3)	less than 6%
Hum & Noise	
(at Vol. Min. with AC Adaptor)	−65dBs
Terminal Impedance	
MIC.	3.9kΩ
Ext. Speaker	47Ω
Dimensions (W x H x D)	93(W) x 158(H) x 42.5(D) mm
Weight	480g
Frequency Range	
AM	525 ~ 1,605kHz
FM	88 ~ 108MHz

−Specifications subject to change without notice.−

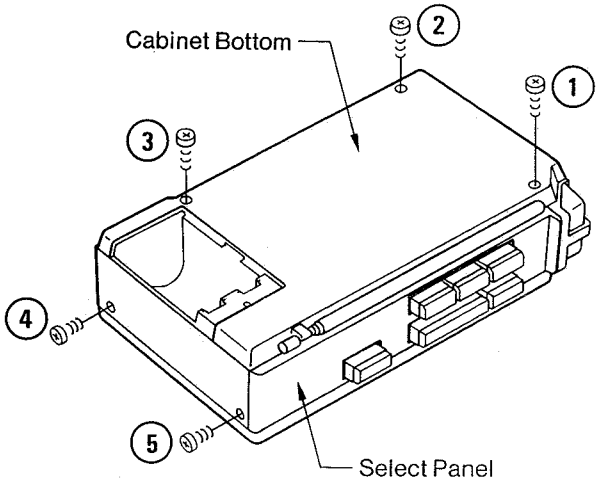
DISASSEMBLY INSTRUCTIONS

GENERAL REMARKS

- Before disassembling the unit, spread a soft rubber mat or a cloth on the work bench to avoid scratches and grease stains.
- Do not use a material which is likely to cause static electricity because transistors and ICs may be easily damaged by it.
- Reassemble the unit, noting the kinds of screws, the soldering and arrangement of the leads. Refer to "Circuit Diagrams and Exploded Views" for correct assembly.
- Before disassembling the unit, take out the cassette tape and the batteries.

CABINET BOTTOM REMOVAL

1. Remove the five screws (1 ~ 5) fastening the Cabinet Bottom and detach the Cabinet Bottom by lifting it.
2. The Select Panel can be removed from the unit by detaching the Cabinet Bottom.

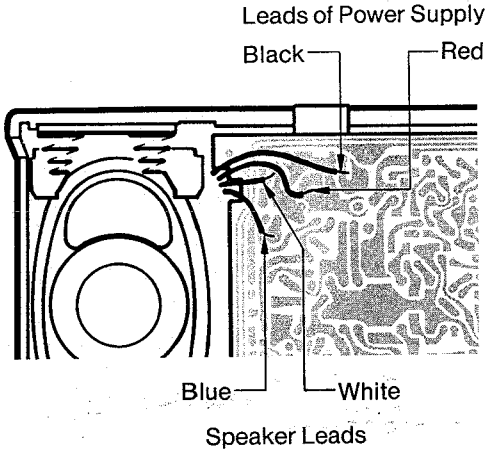


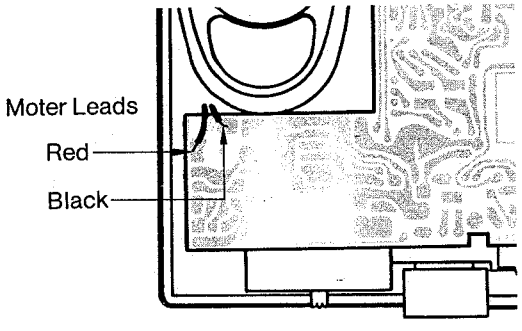
3. Reassemble in reverse order.

DISASSEMBLY INSTRUCTIONS (Continued)

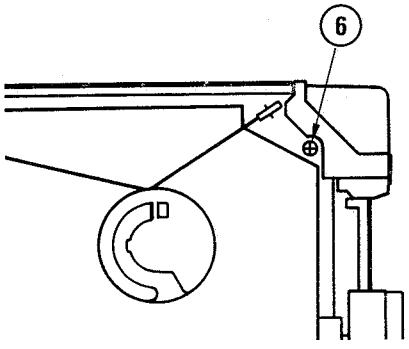
P.C.BOARD ASSEMBLY REMOVAL

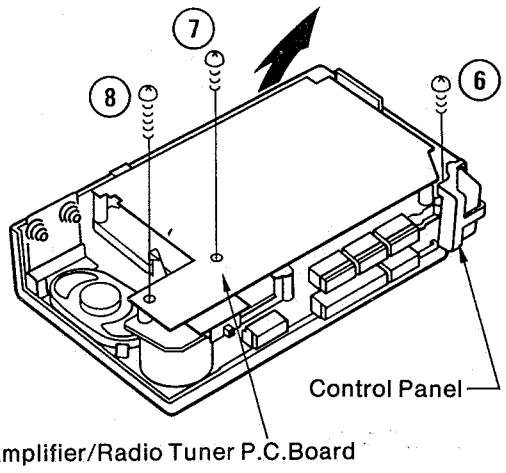
1. Remove the Cabinet Bottom and Select Panel by following the instructions and unsolder the speaker leads (blue and white), the leads of the power supply (black and red) and the motor leads (black and red) from the P.C.Board.





2. Remove the three screws (6 ~ 8) fastening the P.C.Board and detach the P.C.Board by lifting it in the direction of the arrow.





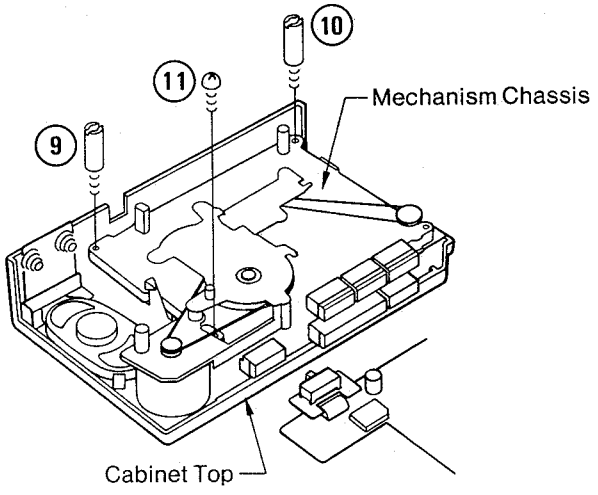
3. Reassemble in reverse order.

NOTE:
When the P.C.Board is mounted on the Mechanism Chassis, set the Switches on the P.C.Board to the Mechanism correctly.

MECHANISM CHASSIS REMOVAL

1. Remove the P.C.Board Assembly by following the instructions.

2. Remove the two posts (9 and 10) and the fastening screw (11) from the Chassis and then, detach the Mechanism Chassis by lifting it from the Cabinet Top.



ADJUSTMENTS

GENERAL REMARKS

- Before adjustment, wipe the tape contacting surfaces clean as well as the contacting surfaces of the driving parts with a soft cloth soaked in alcohol.
  Trouble may occur because of oil and grease stains.

- Carefully handle the belt because grease easily attaches to it. Then, check the used rubber parts. If the rubber has deteriorated or is scratched, replace the parts with new ones.

EQUIPMENT REQUIRED

- Cassette-type Torquemeter
- VTVM (2 sets)
- Frequency Counter
- Dualtrace Synchroscope
- DC Constant-voltage Regulator
- Dummy Load (33Ω)
- Test Tapes
  * 3kHz Test Tape (Example: TEAC MTT-111) for Tape Speed Adjustment
  * 10kHz Test Tape (Example: TEAC MTT-114) for Head Azimuth Adjustment
- Alignment Tool

Before the Electrical Adjustments, set the Switches as follows:

* Tape Select Switch ..... NORMAL
* Function Switch ..... TAPE
* Pitch Control Switch ..... "N"

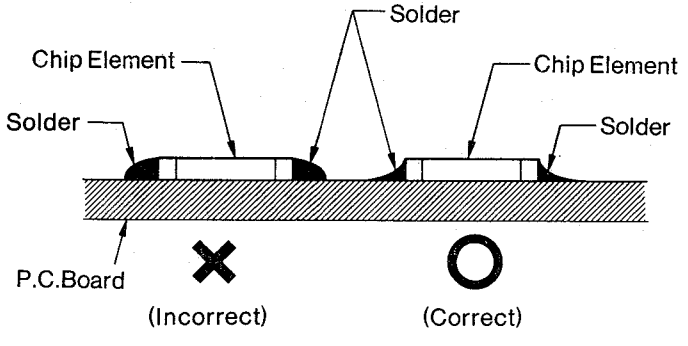
NOTE:
Supply 6.0V DC to the External Power Jack from the constant-voltage regulator at the adjustment.

NOTES ON HANDLING THE CHIP ELEMENT

Pay due caution to the following items:

1. Do not use the removed chip element again.

2. Use a soldering iron of less than 30W.
   * The soldering iron should not touch the body of the chip element.
   * Complete soldering in a short time.
   * Apply solder to the chip element as illustrated below.

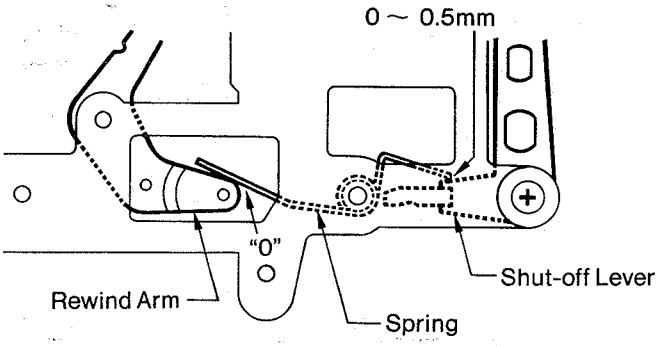


AUTO SHUT-OFF MECHANISM ADJUSTMENT

1. When the unit is set in the playback mode, the Shut-off Lever reciprocates according to the rotations of the Take-up Idler and Take-up Reel.

2. Set the unit in the playback mode with the power supply off and slowly turn the Flywheel clockwise until the Shut-off Lever comes closest to the Spring.

3. Check that the Spring touches the Rewind Arm, and that the clearance of 0 ~ 0.5mm remains between the Shut-off Lever and Spring as illustrated.



4. If the specified clearance is not obtained, adjust the clearance by bending the Spring.

NOTE:
If the clearance is not adjusted correctly, the following symptoms can occur:

A. When the clearance is more than 0.6mm;
   * When the Rewind button is released to return the unit from the review mode to the playback mode, the unit may shut off automatically.

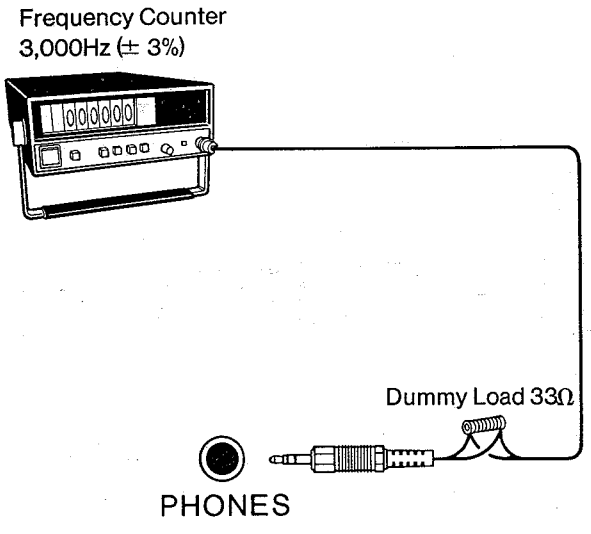
B. When the Shut-off Lever pushes the Spring while reciprocating;
   * When the tape has reached its end with the unit in the playback mode, the unit may not shut off automatically.

ADJUSTMENTS (Continued)

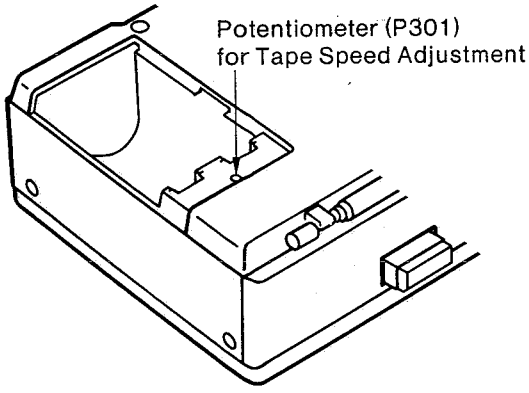
TAPE SPEED ADJUSTMENT

1. Remove the Battery Compartment Lid from the unit and insert a 3kHz test tape (Example: TEAC MTT-111) into the unit.

2. Connect the frequency counter to the headphone jack as illustrated and play back the test tape.

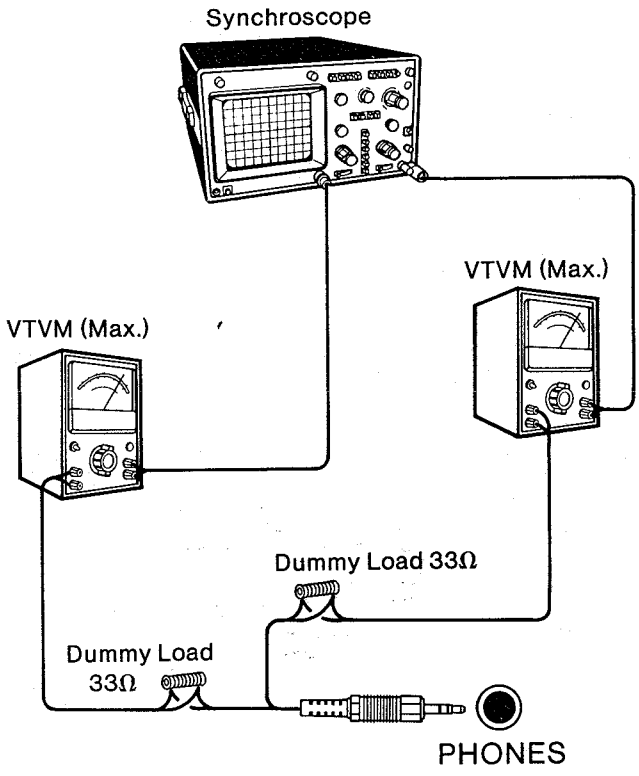


3. While playing back the test tape, adjust the tape speed by turning the potentiometer (P301) on the Amplifier P.C.Board until the frequency counter reads 3kHz (± 3%).



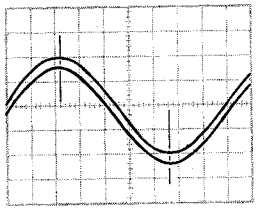
HEAD AZIMUTH ADJUSMENT

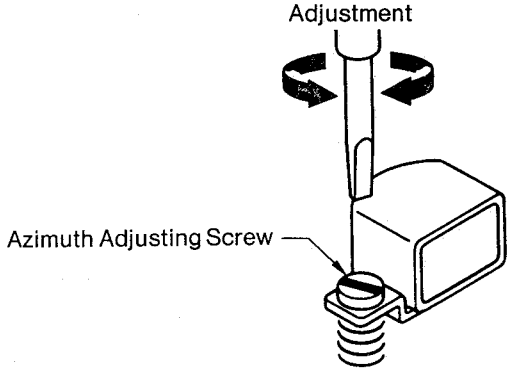
1. Connect two VTVMs and a synchroscope to the headphone jack as illustrated.
   Set the synchroscope as follows:
   * MODE ..... CHOP (chopped)
   * SOURCE ..... INT (internal), CH1 or CH2
   * SWEEP MODE ..... AUTO (automatic)



2. Insert a 10kHz test tape (Example: TEAC MTT-114) into the unit and play it back.

3. While playing back the test tape, slowly turn the azimuth adjusting screw until the amplitudes of both channel output wave forms become maximum and the wave forms overlap as well as possible in the maximum condition of the VTVM as illustrated.





4. After the adjustment, secure the adjusting screw with paint or glue.

DIAL CORD STRINGING

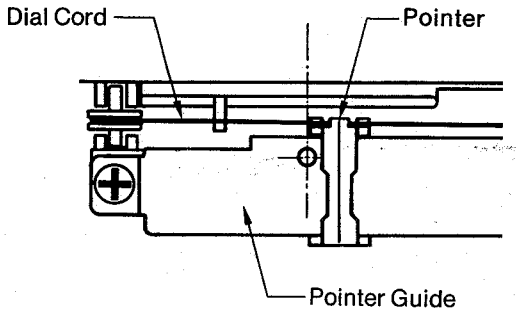
1. Tie the dial cord of length 700mm and diameter ϕ0.3 to the spring and hook the spring to the illustrated position of the drum.

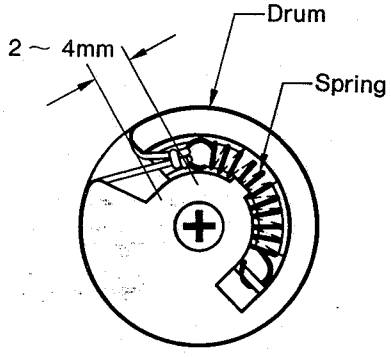
2. Engage the dial cord as illustrated in the following order Drum → Roller A → Roller B → Tuning Shaft (4 turns) → Roller C → Roller D → Drum → Spring

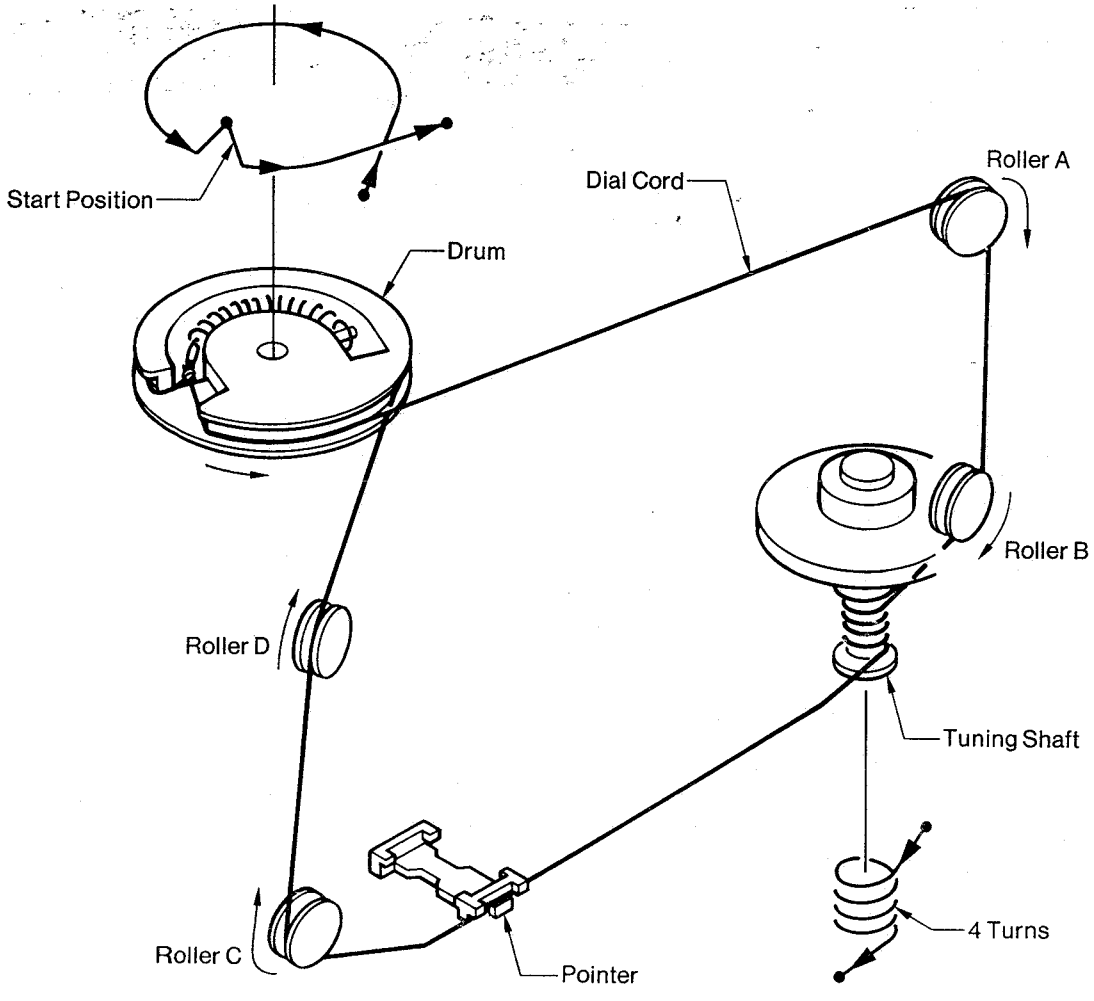
3. Hook the dial cord to the spring and tie the cord where the end of the spring is positioned 2 ~ 4mm from the illustrated position of the drum.

4. Observing the Tuning Knob from the P.C.Board side, turn it clockwise until it stops.
   Then, match the pointer to the mark on the Pointer Guide and attach it to the dial cord as illustrated.

5. Secure the dial cord knot and the pointer with paint or glue in the position.







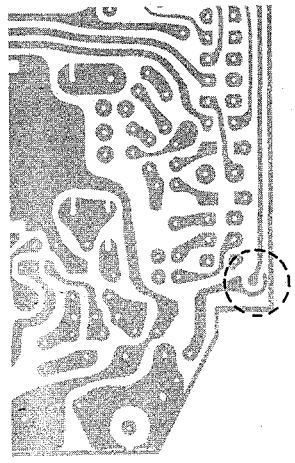
TUNER ADJUSTMENT

EQUIPMENT REQUIRED

- AM Standard Signal Generator
- FM Standard Signal Generator
- Generator Scope
- Loop Antenna
- Dummy Antenna (75Ω, unbalanced type) for FM
- Ceramic Capacitor (10pF) for FM IF Alignment
- VTVM
- Frequency Counter
- Oscilloscope
- Dummy Load (33Ω)
- Alignment Tool
- Before performing the adjustment, set the switches as follows:
  * Function Switch ..... RADIO/PLAY
  * Band Select Switch ..... AM or FM

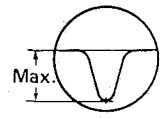
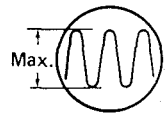
NOTE:

* Use an alignment tool with plastic grip for all adjustments.
* When performing the FM Alignment, open the headphone antenna circuit as illustrated.



AM ALIGNMENT

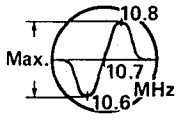
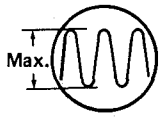
Standard Test Frequency 400Hz and Modulation 30% at AM

Step	Alignment	Connections		Frequency of Signal Generator	Tuning Dial Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	Calibration of IF for AM	Connect loop antenna to output terminal of gene-scope. Place loop antenna 60cm away from bar antenna.	Connect input terminal of gene-scope to Pin 2 (TP4) in IC3.	460kHz	Low End	T2	Obtain symmetrical curve and maximum amplitude. 
2	Calibration of Tuning Range	Connect loop antenna to output terminal of AM signal generator. Place loop antenna 60cm away from bar antenna.	Connect VTVM with 33Ω dummy load and oscilloscope to Headphones jack.	510kHz		T4	Obtain sine-wave of 400Hz and maximum amplitude. 
3				1,670kHz	High End	TC4 (PVC)	
4	Adjustment of Tracking			600kHz	600kHz	L5 (bar ant. coil)	
5				1,400kHz	1,400kHz	TC3 (PVC)	
6	Repeat the above adjustment.						

TUNER ADJUSTMENT (Continued)

FM ALIGNMENT

Standard test frequency 400Hz and deviation 22.5kHz

Step	Alignment	Connections		Frequency of Signal Generator	Tuning Dial Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	Calibration of IF	Connect output terminal of gene-scope to Pin 4 (TP3) of IC1 through ceramic capacitor (10pF).	Connect input terminal of gene-scope to Pin 2 (TP4) of IC3.	10.7MHz	Low End	T1 and T3	Obtain **S** curve and maximum amplitude. 
2	Calibration of Tuning Range	Connect FM signal generator to antenna terminal (TP1) through dummy antenna (75Ω, unbalanced type).	Connect VTVM with 33Ω dummy load and oscilloscope to Headphones jack.	87.35MHz		L2	Obtain sine-curve and maximum amplitude. 
3				108.2MHz	High End	TC2 (PVC)	
4	Adjustment of Tracking			90MHz	90MHz	L1	
5				106MHz	106MHz	TC1 (PVC)	
6	Repeat the above adjustment.						

FM MPX (Multiplex) ADJUSTMENT

19kHz (V.C.O.) ADJUSTMENT

Before performing the adjustment, set the unit as follows:

- Function Switch ..... RADIO/PLAY
- Band Select Switch ..... FM ST

1. Connect the frequency counter to the Pin 12 (test point TP8) in IC3 (LA3361).

2. Adjust the potentiometer (P1) until the frequency counter reads 19kHz (±20Hz).

PARTS LIST

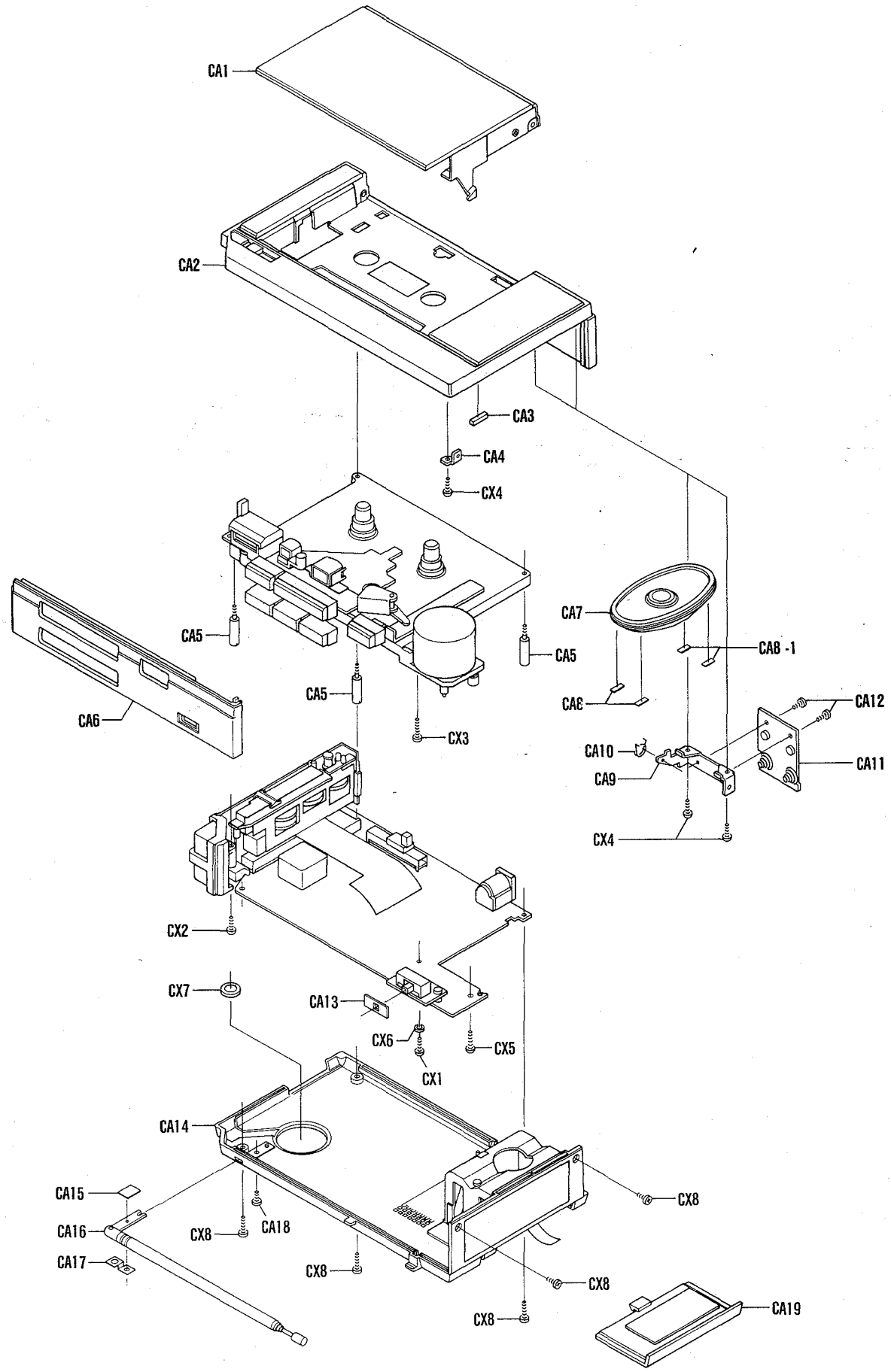
Ref. No.	Part No.	Description		Q'ty
	PACKAGE			
	141 6 1419 67302	Individual Carton		1
	141 6 1449 85400	Case Styrofoam		1
	141 6 3919 43100	Pad		1
	141 6 2519 12090	Poly Cover		2
	141 6 4559 03300	Serial No. Sheet		3
	ACCESSORIES			
*	4 1529 70262	Headphones		1
	4 2419 74052	Cassette		1
	141 6 4519 19400	Warranty Card		1
	141 2 1769 07300	Shoulder Strap		1
	141 2 1769 07401	Hand Strap		1
	141 2 1819 14002	Carrying Case		1
	142 6 4119 31664	Instruction Manual		1
	HEADPHONES			
*	4 1529 70262	Headphones		1
1	4 2369 73560	Plug Cord		1
2	141 2 3529 36700	Tube		2
3	141 2 4469 41100	Ear Pad		2
4	4 1519 71230	Ear Speaker		2
5	141 2 1259 04500	Housing		2
6	141 2 1769 06304	Hanger, Left		1
7	141 2 1769 06305	Hanger, Right		1
8	141 2 8219 32400	Stopper		2
9	141 2 3529 36800	Slide Adjustor		2
10	141 2 1769 06400	Slider		1
	CABINET			
CA1	141 0 1249 22804	Cassette Lid Assy		1
CA2	141 0 1119 87804	Cabinet Top Assy		1
CA3	141 2 4469 36500	Cushion		1
CA4	141 2 2149 17900	Bracket		1
CA5	141 2 7539 23700	Spacer		3
CA6	141 2 1149 28700	Panel, Select		1
CA7	4 1519 71360	Speaker (8Ω) [SP1]		1
CA8	141 2 4419 17100	Cushion		2
CA8-1	141 2 4419 17101	Cushion		2
CA9	141 2 2149 18000	Bracket, Speaker		1
CA10	141 2 8519 64500	Spring, Cassette Lid		1
CA11	141 0 3829 08800	Terminal Battery Assy		1
CA12	141 2 4219 09003	Screw	+M2.0x2.0	2
CA13	141 2 2419 27500	Sheet, Knob		1
CA14	141 0 1119 87904	Cabinet Bottom Assy		1
CA15	141 2 4359 21500	Insulator		1
CA16	4 2449 70320	Rod Antenna		1
CA17	141 2 3829 34400	Antenna Terminal		1
CA18	141 2 4219 03002	Screw	+M2.0x3.0	1
CA19	141 0 1339 11201	Battery Lid Assy		1
CX1	101 3 1302 00411	Screw, Pan Hd.	+M2.0x4	1
CX2	101 3 1302 00611	Screw, Pan Hd.	+M2.0x6	1
CX3	101 3 1302 01011	Screw, Pan Hd.	+M2.0x10	1
CX4	103 3 1302 00611	Screw, Pan Hd. Tapping-2	+M2.0x6	3
CX5	103 3 1302 01211	Screw, Pan Hd. Tapping-2	+M2.0x12	1
CX6	110 3 2102 00081	Spring Washer-2	M2.0	1
CX7	110 3 9500 80054	Nylon Washer	M5.0x8.0x0.5	1
CX8	128 3 1320 05018	PI Screw-3, Pan Hd.	+M2.0x5.0	5

Ref. No.	Part No.	Description		Q'ty
	RADIO CHASSIS			
DC1	141 2 1149 28801	Control Panel		1
DC2	141 2 4469 42600	Cushion		2
DC3	4 1539 70780	Microphone Assy [BM1]		1
DC4	141 2 2449 44400	Net, Mike		1
DC5	141 2 1559 07200	Grill, Mike		1
DC6	141 2 1649 17602	Switch Button		2
DC7	141 2 8259 10600	Roller		4
DC8	141 2 7519 60100	Roller Shaft		1
DC9	141 2 4219 26800	Screw		1
DC10	141 2 1639 50801	Knob, Volume		1
DC11	141 2 1639 50701	Knob, Volume		1
DC12	4 2229 73404	Volume Control P.C.B. Assy [**See PCB2**]		1
DC13	141 2 1649 19701	Knob, Switch		1
DC14	141 2 8219 32700	Pointer Guide		1
DC15	141 2 5119 06500	Pointer		1
DC16	4 2029 70533	LED Indicator P.C.B. Assy [**See PCB3**]		1
DC17	4 2439 71760	Flexible Printed Circuit		1
DC18	141 2 1639 50601	Knob, Tone		1
DC19	141 2 2719 18400	Pin, Strap		1
DC20	141 2 7519 60900	Roller Shaft		3
DC21	141 2 7519 60200	Dial Shaft		1
DC22	141 2 1639 50901	Knob, Tuning		1
DC23	4 2579 71052	Bar Antenna [L5]		1
DC24	141 2 4469 40100	Cushion		1
DC25	4 1329 78219	AMP/Tuner P.C.B. Assy [**See PCB1**]		1
DC26	141 2 3769 13900	Sheet, Switch		2
DC27	141 2 1539 14600	Spacer, Jack		1
DC27-1	141 2 1539 14601	Spacer, Jack		1
DC28	141 2 8429 06400	R/P Switch Lever		1
DC29	141 2 4419 14901	Sheet		1
DC30	4 2319 75651	Switch P.C.B. Assy [**See PCB4**]		1
DC31	141 2 7539 23800	Spacer		2
DC32	141 2 5389 03600	Drum		1
DC33	141 2 8549 14200	Spring		1
DY1	101 3 1302 00811	Screw, Pan Hd.	+M2.0x8	2
DY2	103 3 1302 00611	Screw, Pan Hd. Tapping-2	+M2.0x6	4
DY3	106 3 1302 00123	Hex. Nut-3	M2.0	2
DY4	127 3 1317 02514	PI Screw-1, Pan Hd.	+M1.7x2.5	1
DY5	128 3 1317 03018	PI Screw-3, Pan Hd.	+M1.7x3.0	1
DY6	629 3 0907 00000	String, ϕ0.3		1

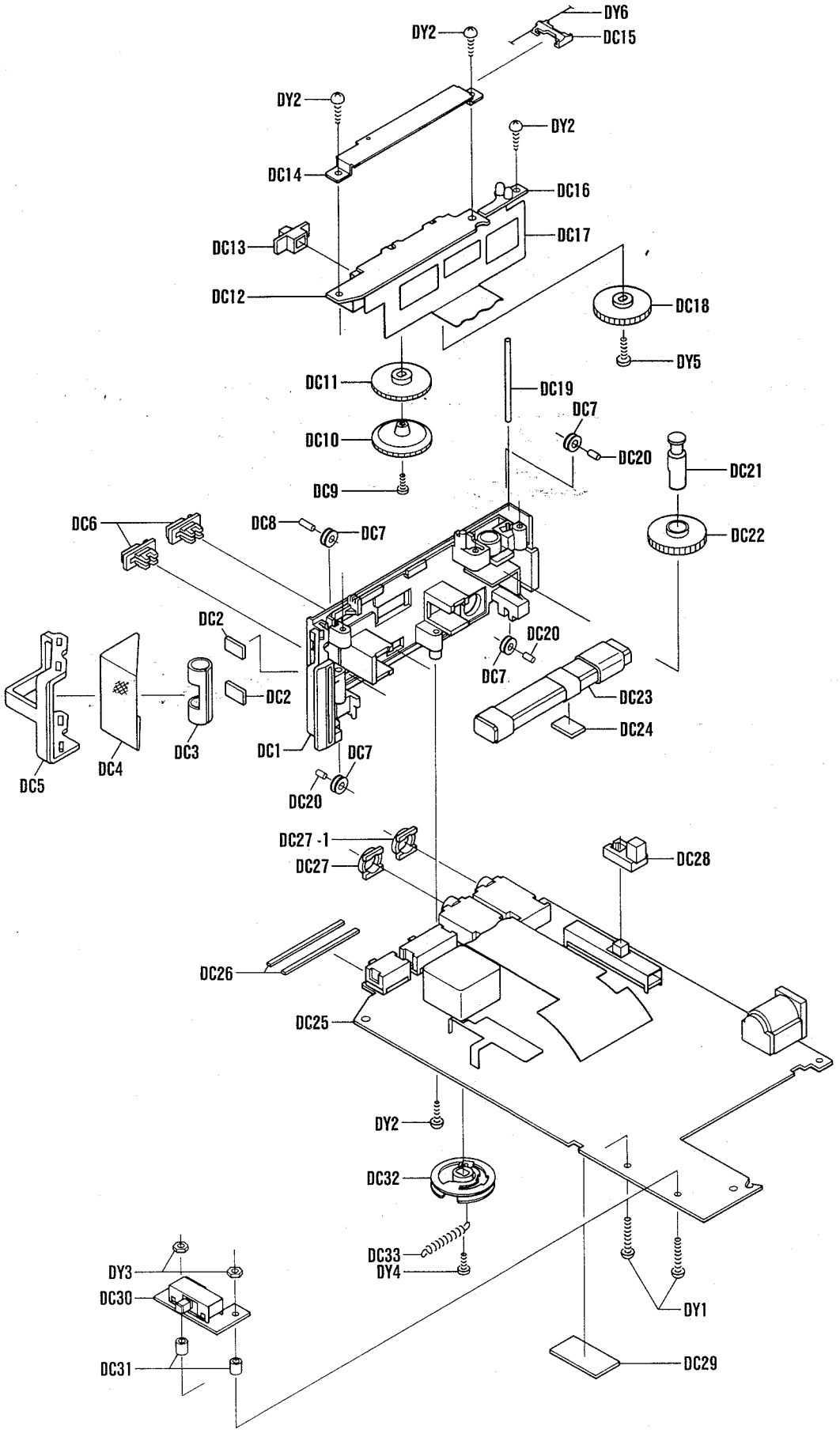
NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

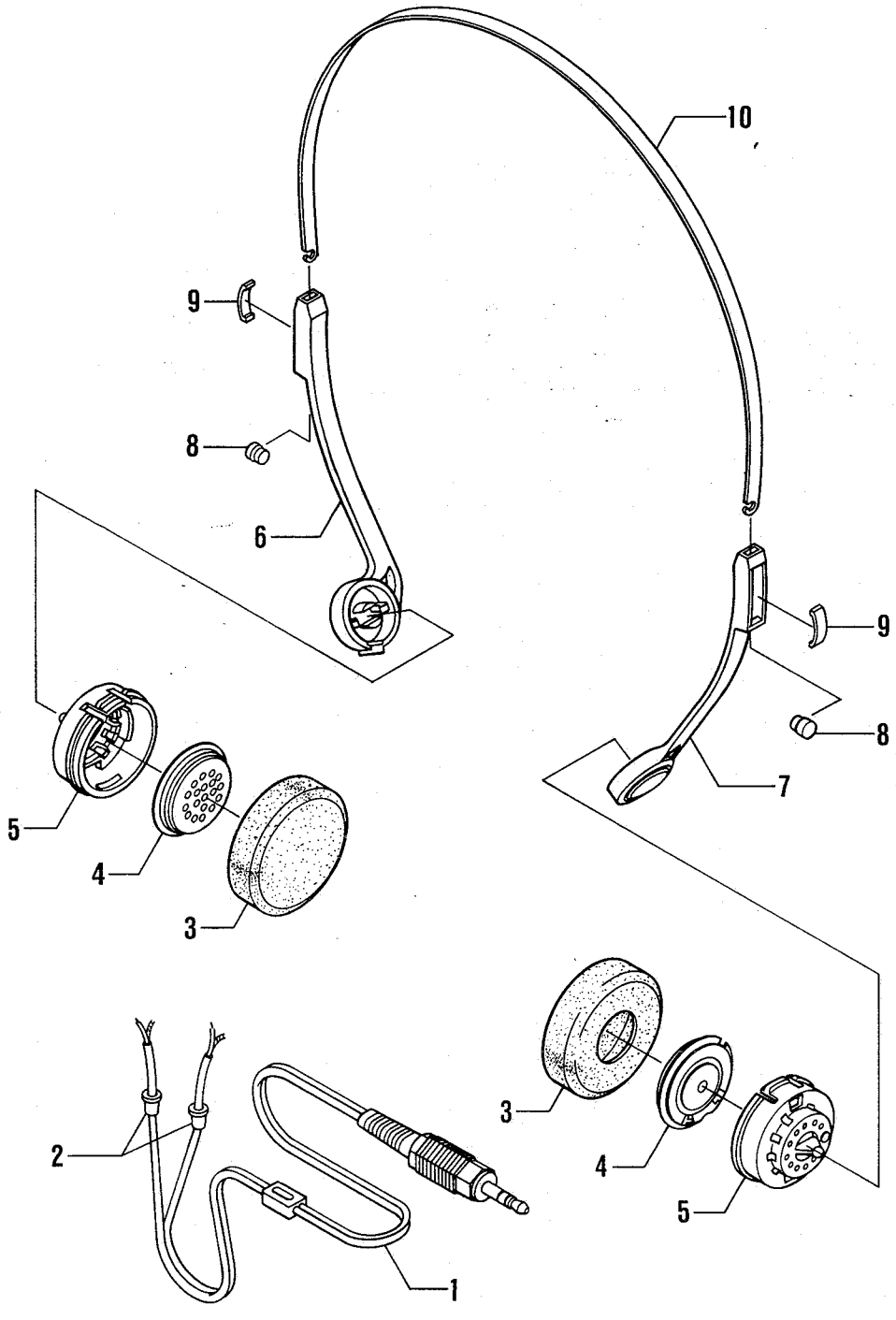
CABINET EXPLODED VIEW



RADIO CHASSIS EXPLODED VIEW



HEADPHONE EXPLODED VIEW



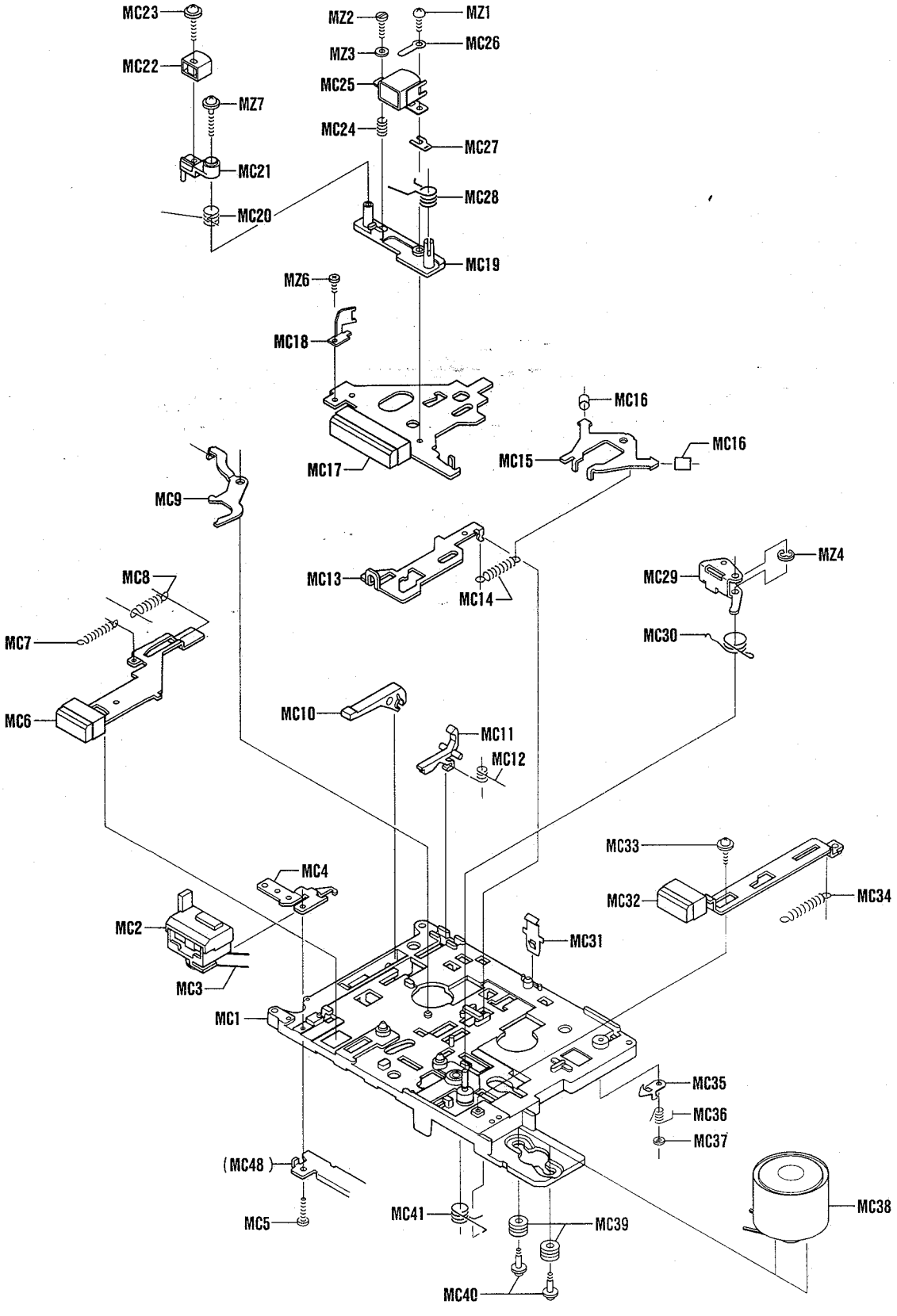
MECHANISM PARTS LIST

Ref. No.	Part No.	Description		Q'ty
	MECHANISM			
MC1	141 0 3119 21300	Chassis Assy		1
MC2	141 2 8119 10800	Counter		1
MC3	141 2 5649 20200	Counter Belt		1
MC4	141 2 8139 08800	Counter Bracket		1
MC5	141 2 4219 28100	Screw, Pan Hd.	+M2.0x8.6	1
MC6	141 0 7419 36002	Record Rod Assy		1
MC7	141 2 8519 94300	Spring, Lock Plate		1
MC8	141 2 8519 44100	Spring, Interlock		1
MC9	141 2 8419 11900	Record Lock Lever		1
MC10	141 2 7419 81800	Eject Lever		1
MC11	141 2 8419 11800	Interlock Lever		1
MC12	141 2 8529 10800	Spring, Interloc		1
MC13	141 2 7419 82500	Play Rod		1
MC14	141 2 8519 61100	Spring, Slide		1
MC15	141 2 7149 06101	Brake Arm		1
MC16	141 2 4459 25200	Brake Cover		2
MC17	141 0 7319 25603	Slide Base Assy		1
MC18	141 2 8219 32000	Guide Tape		1
MC19	141 2 3529 36000	Spacer, Head		1
MC20	141 2 8529 10700	Spring, Erase Head Arm		1
MC21	141 2 7439 30600	Erase Head Arm		1
MC22	4 2429 72220	Erase Head		1
MC23	141 2 4219 28300	Screw w/Washer		1
MC24	141 2 8519 47400	Spring, Head		1
MC25	4 2429 72210	R/P Head		1
MC26	141 2 4729 01900	Lug		1
MC27	141 2 3529 18101	Spacer, Head		1
MC28	141 2 8529 11100	Spring, Slide Base		1
MC29	141 0 5459 01900	Pinch Roller Arm Assy		1
MC30	141 2 8529 11200	Spring, Pinch Roller		1
MC31	141 2 8539 46800	Spring, Cassette		1
MC32	141 0 7419 35903	Completed Pause Rod		1
MC33	141 2 4219 13201	Screw w/Washer		1
MC34	141 2 8549 16400	Spring, Pause Rod		1
MC35	141 2 7419 84200	Pause Lock Lever		1
MC36	141 2 8529 10600	Spring, Pause Latch		1
MC37	141 2 4539 29600	Washer		1
MC38	4 5279 71182	Motor		1
MC39	141 2 4459 26800	Cushion, Motor		2
MC40	141 2 4219 23300	Screw		2
MC41	141 2 8529 11000	Spring, Play Rod		1
MC42	141 2 4419 18200	Cushion		1
MC43	141 2 7539 23900	Spacer, PCB		1
MC44	141 2 5519 46400	Take-up Idler		1
MC45	141 2 4539 15800	Washer		1
MC46	141 0 7419 35803	Completed Rewind Rod		1
MC47	141 0 7419 35603	Completed F.FWD. Rod		1
MC48	141 2 3169 19700	Bracket Plate		1
MC49	141 2 8519 33000	Spring, Index Lock Lever		1
MC50	141 2 8549 16500	Spring, Stop/Eject Rod		1
MC51	141 2 8549 19800	Spring, F.FWD Rewind Rod		2
MC52	141 2 4539 21800	Washer		1
MC53	141 2 5519 46000	Capstan Gear		1
MC54	141 2 8559 03300	Spring, Flywheel		1
MC55	141 0 5219 09000	Flywheel Assy		1
MC56	141 2 5649 20300	Capstan Belt		1
MC57	141 0 3129 01501	Reel Plate Assy		1
MC58	141 2 8559 04600	Spring		1
MC59	141 2 4539 02100	Washer		1
MC60	141 2 7419 81600	Shut-off Lever		1
MC61	141 2 8529 13000	Spring, ASO Cancel		1
MC62	141 0 5319 07000	Take-up Reel Assy		1
MC63	141 2 4539 28900	Spindle Washer		4
MC64	141 2 8559 04300	Spring, Supply		1
MC65	141 0 5319 07100	Reel Supply Assy		1
MC66	141 0 7439 11200	Rewind Arm Assy		1
MC67	141 2 5519 46100	Rewind Gear		1
MC68	141 2 7439 30400	Selector Link		1
MC69	141 2 7439 30500	Fast Arm		1
MC70	141 2 8549 18400	Spring, Fast Arm		1
MC71	141 2 7419 81700	F.FWD. Lever		1
MC72	141 2 8549 15200	Spring, F.FWD. Rewind Arm		1
MC73	141 2 4539 09300	Washer		1
MC74	141 2 5519 46200	Fast Gear		1
MC75	141 2 4539 30300	Washer		1
MC76	141 0 7419 35703	Stop Rod Assy		1
MC77	141 2 8549 16600	Spring, Eject Plate		1
MC78	141 2 7319 54100	Eject Plate		1
MC79	141 2 7319 54000	Lock Plate		1
MC80	141 2 7419 81900	Cue Review Lever		1
MC81	141 2 8429 06300	Record Plate		1
MC82	141 2 8519 84300	Spring, Flywheel Support		1
MC83	141 2 8549 20800	Spring, Record Plate		1
MC84	141 2 4539 06900	Washer		1
MC85	141 2 7319 53700	Take-up Arm		1
MC86	141 2 8549 15300	Spring, Take-up Arm		1
MZ1	101 3 1302 00511	Screw, Pan Hd.	+M2.0x5	1
MZ2	101 3 2502 00711	Screw, Cylinder Hd.	-M2.0x7	1
MZ3	110 3 1102 00023	Sm. Round Washer	M2.0	1
MZ4	112 3 1302 00082	E Ring	M2.0	2
MZ5	112 3 1302 50082	E Ring	M2.5	1
MZ6	127 3 1317 02013	PI Screw-1, Pan Hd.	+M1.7x2.0	1
MZ7	135 3 1302 01211	Screw, Pan Hd. C PW	+M2.0x12	1
MZ8	143 3 1702 00618	Screw, Bind Hd. Tapping-B	+M2.0x6	4
MZ9	143 3 1202 01018	Screw, Flat Hd. Tapping-B	+M2.0x10	1

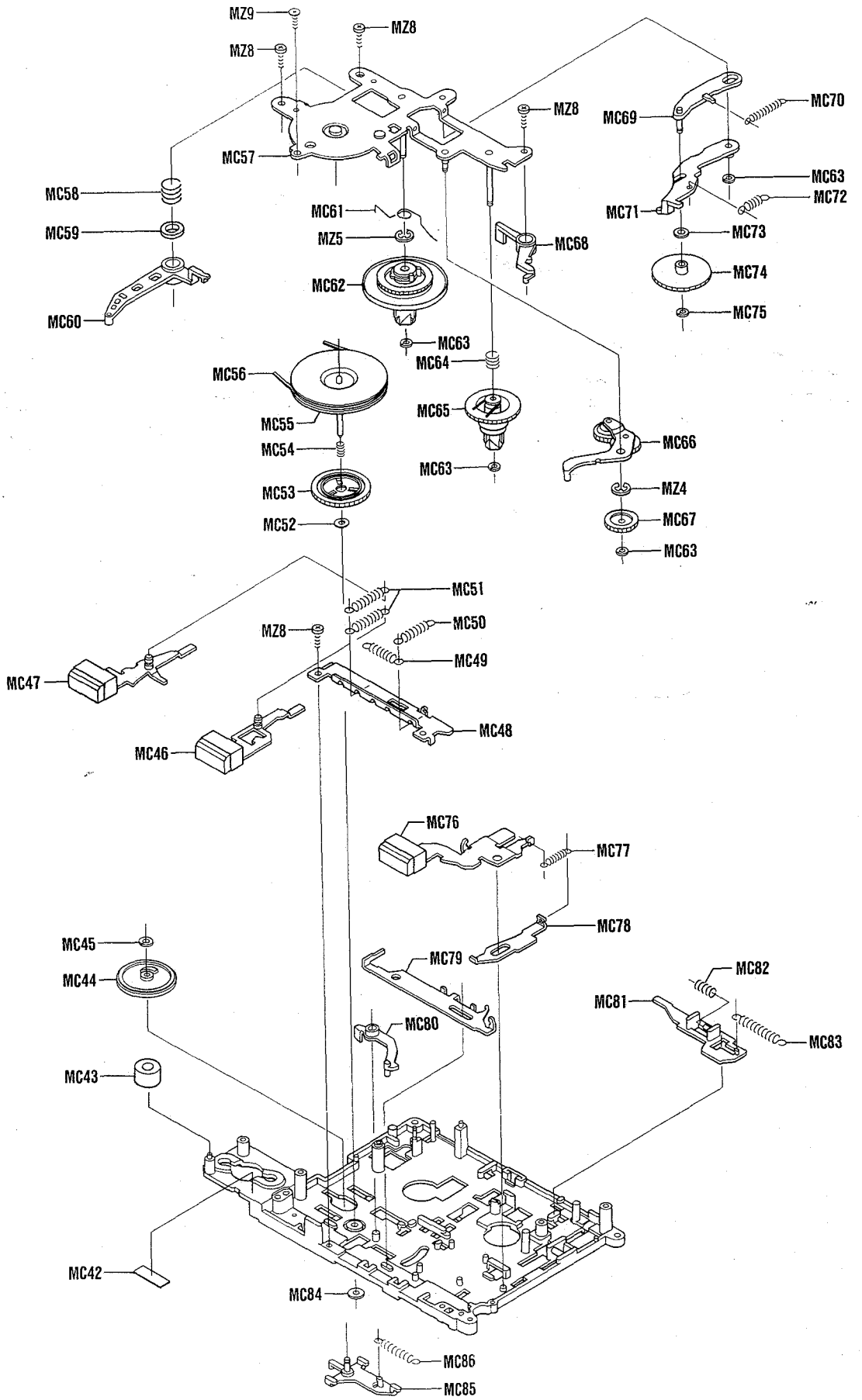
NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

MECHANISM EXPLODED VIEW



MECHANISM EXPLODED VIEW (Continued)



P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description	Q'ty
	AMP/TUNER P.C.B. ASSY		
PCB1	4 1329 78219	AMP/Tuner P.C.B. Assy	1
	4 2369 70742	RT Pin	4
	141 2 3229 39700	Shield Plate	1
	141 2 3229 39800	Shield Plate	1
	141 2 4359 30700	Insulator	1
	141 2 4359 31900	Spacer Plate	1
CF1	4 2539 70881	Ceramic Filter	1
CF2	4 2539 71191	Ceramic Filter	1
PVC1	4 2249 70741	Variable Condenser	1
J1	4 2359 75500	1P Jack (Stereo Mike)	1
J2	4 2359 75500	1P Jack (Headphones)	1
J3	4 2359 72954	Ext. Power Jack	1
S2	4 2319 75141	Slide Switch (Record/Play)	1
S3	4 2319 75260	Slide Switch (Function)	1
S4	4 2319 75270	Slide Switch (Tape Select)	1
S6	4 2319 73990	Leaf Switch (Power)	1
S7	4 2319 73991	Leaf Switch (Tape)	1
T1	4 2569 71331	FM DET, 10.7	1
T2	4 2569 71450	IFT, AM	1
T3	4 2569 71321	FM IFT, 10.7	1
T4	4 2589 71620	OSC Transformer, MW	1
T301	4 2589 72040	OSC Transformer	1
L1	4 2599 70740	RF Coil	1
L2	4 2589 72021	FM OSC Coil	1
L3	4 2539 71180	Trap 19kHz	1
L4	4 2539 71180	Trap 19kHz	1
L6	4 2539 71171	Band Pass Filter	1
L101	4 2539 71001	Choke Coil (8.2μH)	1
L102	4 2539 70991	Choke Coil (2.2μH)	1
L201	4 2539 71001	Choke Coil (8.2μH)	1
L202	4 2539 70991	Choke Coil (2.2μH)	1
L301	4 2539 70981	Choke Coil (10μH)	1
L302	4 2539 70650	Choke Coil (3.3μH)	1
L303	4 2539 70650	Choke Coil (3.3μH)	1
L304	4 2539 70740	Choke Coil (500μH)	1
P1	4 2229 72995	Potentiometer (B-5kΩ)	1
P301	4 2229 72996	Potentiometer (B-10kΩ)	1
TH301	204 5 9000 00090	Thermistor, SDT 09	1
TH302	204 5 9000 01000	Thermistor, SDT 100	1
IC1	4 2069 71510	IC, AN7216	1
IC2	4 2069 71530	IC, AN7223	1
IC3	206 5 0483 36161	IC, LA3361	1
IC301	4 2069 71710	IC, M51544L	1
IC302	206 5 1634 19010	IC, LA4190	1
IC303	206 5 3285 52210	IC, LA5522	1
Q1	4 2039 70710	Transistor, 2SC2786	1
Q2	203 5 4392 99940	Transistor, 2SC 2999	1
Q101	203 5 5260 69362	Transistor, 2SC693	1
Q102	203 5 5210 53670	Transistor, 2SC 536	1
Q103	203 5 4451 04887	Transistor, 2SD 1048	1
Q201	203 5 5260 69362	Transistor, 2SC693	1
Q202	203 5 5210 53670	Transistor, 2SC 536	1
Q203	203 5 4451 04887	Transistor, 2SD 1048	1
Q204	203 5 4451 04887	Transistor, 2SD 1048	1
Q205	203 5 4401 17915	Transistor, 2SA 1179	1
Q301	203 5 4830 60860	Transistor, 2SA 608	1
Q302	203 5 4451 04887	Transistor, 2SD 1048	1
Q303	203 5 5210 53670	Transistor, 2SC 536	1
D1	205 5 9040 44210	Diode, DS 442	1
D3	202 5 3160 00110	Diode, GMA-01	1
D4	202 5 3160 00110	Diode, GMA-01	1
D101	202 5 3160 00110	Diode, GMA-01	1

Ref. No.	Part No.	Description			Q'ty
D201	202 5 3160 00110	Diode, GMA-01			1
D202	202 5 3160 00110	Diode, GMA-01			1
D303	202 5 3160 00110	Diode, GMA-01			1
D305	4 2029 71320	Diode, MA151WK			1
D306	202 5 3160 00110	Diode, GMA-01			1
D307	202 5 3160 00110	Diode, GMA-01			1
D308	202 5 3160 00110	Diode, GMA-01			1
C1	CC8 0 A500 CD00C	Ceramic	8pF	50V ±0.2pF	1
C2	CG1 0 3500 KH00B	Chip	0.01μF	50V ±10%	1
C3	CC1 8 0500 JD00C	Ceramic	18pF	50V ±5%	1
C4	CG1 0 3500 KH00B	Chip	0.01μF	50V ±10%	1
C5	CC2 0 0500 JCH0C	Ceramic	20pF	50V ±5%	1
C6	CC5 0 A500 CD00C	Ceramic	5pF	50V ±0.2pF	1
C7	CC1 5 0500 JD00C	Ceramic	15pF	50V ±5%	1
C8	CC1 0 3500 ZG00C	Ceramic	0.01μF	50V +80,-20%	1
C9	CG1 0 3500 KH00B	Chip	0.01μF	50V ±10%	1
C10	CG1 0 2500 KH00B	Chip	0.001μF	50V ±10%	1
C11	CG1 0 3500 KH00B	Chip	0.01μF	50V ±10%	1
C12	CG4 7 3250 MH00A	Chip	0.047μF	25V ±20%	1
C13	CD1 0 763A 0002V	Electrolytic	100μF	6.3V	1
C14	CD4 7 5250 0002V	Electrolytic	4.7μF	25V	1
C15	4 2239 70791	Capacitor	10μF	16V	1
C16	CG4 7 3250 MH00A	Chip	0.047μF	25V ±20%	1
C17	CG4 7 3250 MH00A	Chip	0.047μF	25V ±20%	1
C18	CG3 3 3250 MH00A	Chip	0.033μF	25V ±20%	1
C19	CD4 7 663A 0002V	Electrolytic	47μF	6.3V	1
C20	CD1 0 6160 0002V	Electrolytic	10μF	16V	1
C21	CG3 3 3250 MH00A	Chip	0.033μF	25V ±20%	1
C22	CD2 2 663A 0002V	Electrolytic	22μF	6.3V	1
C23	CD4 7 5250 0002V	Electrolytic	4.7μF	25V	1
C24	CD2 2 663A 0002V	Electrolytic	22μF	6.3V	1
C25	CG3 3 3250 MH00A	Chip	0.033μF	25V ±20%	1
C26	CT1 0 463A M00AV	Tantalume	0.1μF	6.3V ±20%	1
C27	CG6 8 2500 KH00B	Chip	0.0068μF	50V ±10%	1
C28	CG2 7 2500 KH00B	Chip	0.0027μF	50V ±10%	1
C29	CG3 3 3250 MH00A	Chip	0.033μF	25V ±20%	1
C30	CT1 0 463A M00AV	Tantalume	0.1μF	6.3V ±20%	1
C31	CG6 8 2500 KH00B	Chip	0.0068μF	50V ±10%	1
C32	CG2 7 2500 KH00B	Chip	0.0027μF	50V ±10%	1
C33	CD1 0 5500 0002V	Electrolytic	1μF	50V	1
C34	CD1 0 5500 0002V	Electrolytic	1μF	50V	1
C35	CT4 7 463A M00AV	Tantalume	0.47μF	6.3V ±20%	1
C36	CP1 0 2101 J002V	Polypropylen	0.001μF	100V ±5%	1
C37	CG3 3 3250 MH00A	Chip	0.033μF	25V ±20%	1
C38	CD1 0 763A 0001V	Electrolytic	100μF	6.3V	1
C39	CG3 3 3250 MH00A	Chip	0.033μF	25V ±20%	1
C40	CI4 7 3120 ZF00C	Boundary	0.047μF	12V +80,-20%	1
C41	4 2239 70520	Capacitor	220μF	6.3V	1
C42	CG2 2 3250 KH00B	Chip	0.022μF	25V ±10%	1
C43	CC7 0 A500 CD00C	Ceramic	7pF	50V ±0.2pF	1
C44	CG1 0 3500 KH00B	Chip	0.01μF	50V ±10%	1
C45	CG2 2 2500 KH00A	Chip	0.0022μF	50V ±10%	1
C46	CC5 0 A500 CD00C	Ceramic	5pF	50V ±0.2pF	1
C101	CT1 0 463A M00AV	Tantalume	0.1μF	6.3V ±20%	1
C102	CG2 2 3250 KH00B	Chip	0.022μF	25V ±10%	1
C103	CG1 0 2500 KH00A	Chip	0.001μF	50V ±10%	1
C104	CD3 3 5250 0002V	Electrolytic	3.3μF	25V	1
C105	CG1 0 2500 KH00B	Chip	0.001μF	50V ±10%	1
C106	CD4 7 4500 0002V	Electrolytic	0.47μF	50V	1
C107	CD1 0 740A 0002V	Electrolytic	100μF	4V	1
C108	CD1 0 5500 0002V	Electrolytic	1μF	50V	1
C109	CG1 0 2500 KH00B	Chip	0.001μF	50V ±10%	1
C110	CC1 0 2500 KE00C	Ceramic	0.001μF	50V ±10%	1
C111	CG4 7 3250 MH00A	Chip	0.047μF	25V ±20%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
C112	CG1 2 2500 KH00B	Chip	0.0012μF	50V	±10%	1
C113	CG8 2 2500 KH00B	Chip	0.0082μF	50V	±10%	1
C114	CD4 7 4500 0002V	Electrolytic	0.47μF	50V		1
C115	CD1 0 5500 0002V	Electrolytic	1μF	50V		1
C117	CD1 0 5500 0002V	Electrolytic	1μF	50V		1
C118	CG1 5 2500 KH00B	Chip	0.0015μF	50V	±10%	1
C119	CD4 7 640A 0002V	Electrolytic	47μF	4V		1
C121	CD4 7 640A 0002V	Electrolytic	47μF	4V		1
C122	4 2239 70880	Capacitor	1μF	16V		1
C123	CD2 2 740A 0002V	Electrolytic	220μF	4V		1
C124	CD1 0 5500 0002V	Electrolytic	1μF	50V		1
C125	CT2 2 563A M00AV	Tantalume	2.2μF	6.3V	±20%	1
C126	CG1 8 2500 KH00B	Chip	0.0018μF	50V	±10%	1
C127	CP3 9 2101 J001V	Polypropylen	0.0039μF	100V	±5%	1
C128	CG3 9 2500 KH00B	Chip	0.0039μF	50V	±10%	1
C129	CD4 7 640A 0002V	Electrolytic	47μF	4V		1
C130	CG2 2 3250 MH00A	Chip	0.022μF	25V	±20%	1
C131	CG1 8 3500 KH00B	Chip	0.018μF	50V	±10%	1
C201	CT1 0 463A M00AV	Tantalume	0.1μF	6.3V	±20%	1
C202	CG2 2 3250 KH00B	Chip	0.022μF	25V	±10%	1
C203	CG1 0 2500 KH00B	Chip	0.001μF	50V	±10%	1
C204	CD3 3 5250 0002V	Electrolytic	3.3μF	25V		1
C205	CC1 0 2500 KE00C	Ceramic	0.001μF	50V	±10%	1
C206	CD4 7 4500 0002V	Electrolytic	0.47μF	50V		1
C207	CD1 0 740A 0002V	Electrolytic	100μF	4V		1
C208	CD1 0 5500 0002V	Electrolytic	1μF	50V		1
C209	CG1 0 2500 KH00B	Chip	0.001μF	50V	±10%	1
C210	CC1 0 2500 KE00C	Ceramic	0.001μF	50V	±10%	1
C211	CG4 7 3250 MH00A	Chip	0.047μF	25V	±20%	1
C212	CG1 2 2500 KH00B	Chip	0.0012μF	50V	±10%	1
C213	CG8 2 2500 KH00B	Chip	0.0082μF	50V	±10%	1
C214	CD4 7 4500 0002V	Electrolytic	0.47μF	50V		1
C215	CD1 0 5500 0002V	Electrolytic	1μF	50V		1
C217	CD1 0 5500 0002V	Electrolytic	1μF	50V		1
C218	CG1 5 2500 KH00B	Chip	0.0015μF	50V	±10%	1
C219	CD1 0 740A 0002V	Electrolytic	100μF	4V		1
C220	CD1 0 6160 0002V	Electrolytic	10μF	16V		1
C221	CD4 7 640A 0002V	Electrolytic	47μF	4V		1
C222	4 2239 70880	Capacitor	1μF	16V		1
C223	CD2 2 740A 0002V	Electrolytic	220μF	4V		1
C224	CD1 0 5500 0002V	Electrolytic	1μF	50V		1
C225	CT2 2 563A M00AV	Tantalume	2.2μF	6.3V	±20%	1
C226	CG1 8 2500 KH00B	Chip	0.0018μF	50V	±10%	1
C227	CP3 9 2101 J001V	Polypropylen	0.0039μF	100V	±5%	1
C228	CG3 9 2500 KH00B	Chip	0.0039μF	50V	±10%	1
C231	CG1 8 3500 KH00B	Chip	0.018μF	50V	±10%	1
C301	CG1 0 2500 KH00B	Chip	0.001μF	50V	±10%	1
C302	4 2239 70520	Capacitor	220μF	6.3V		1
C303	CD1 0 7100 0001V	Electrolytic	100μF	10V		1
C304	CD3 3 7100 0003V	Electrolytic	330μF	10V		1
C305	CD3 3 7100 0003V	Electrolytic	330μF	10V		1
C306	4 2239 70840	Capacitor	220μF	16V		1
C307	4 2239 70510	Capacitor	470μF	6.3V		1
C308	4 2239 70860	Capacitor	470μF	6.3V		1
C309	CD4 7 663A 0002V	Electrolytic	47μF	6.3V		1
C310	CG5 6 1500 JD00B	Chip	560pF	50V	±5%	1
C311	CG8 2 1500 JD00B	Chip	820pF	50V	±5%	1
C312	CG6 8 2500 KH00B	Chip	0.0068μF	50V	±10%	1
C313	CG1 0 3500 KH00B	Chip	0.01μF	50V	±10%	1
C314	CD1 0 6160 0002V	Electrolytic	10μF	16V		1
C315	CD1 0 6160 0002V	Electrolytic	10μF	16V		1
C316	CD1 0 6160 0002V	Electrolytic	10μF	16V		1
C317	CD2 2 5500 0002V	Electrolytic	2.2μF	50V		1
C318	CD4 7 5250 0002V	Electrolytic	4.7μF	25V		1
C319	4 2239 70860	Capacitor	470μF	6.3V		1
C320	CD2 2 663A 0002V	Electrolytic	22μF	6.3V		1
C321	CC3 3 2500 KE00C	Ceramic	0.0033μF	50V	±10%	1
C322	CD4 7 5250 0002V	Electrolytic	4.7μF	25V		1
C323	CI4 7 3120 ZF00C	Boundary	0.047μF	12V	+80,-20%	1
C324	CI4 7 3120 ZF00C	Boundary	0.047μF	12V	+80,-20%	1
R1	RG3 3 4121 JA000	Chip	330kΩ	1/8W	±5%	1
R2	RP3 3 1121 JV000	Pretty Carbon	330Ω	1/8W	±5%	1
R4	RP1 0 1121 JV000	Pretty Carbon	100Ω	1/8W	±5%	1
R5	RP1 0 1121 JV000	Pretty Carbon	100Ω	1/8W	±5%	1
R6	RP3 9 3121 JV000	Pretty Carbon	39kΩ	1/8W	±5%	1
R7	RG1 0 5121 JA000	Chip	1MΩ	1/8W	±5%	1
R8	RP3 3 1121 JV000	Pretty Carbon	330Ω	1/8W	±5%	1
R9	RP1 0 3121 JV000	Pretty Carbon	10kΩ	1/8W	±5%	1
R11	RG3 3 2121 JA000	Chip	3.3kΩ	1/8W	±5%	1
R12	RG2 7 2121 JA000	Chip	2.7kΩ	1/8W	±5%	1
R13	RG6 8 2121 JA000	Chip	6.8kΩ	1/8W	±5%	1
R14	RG2 7 2121 JA000	Chip	2.7kΩ	1/8W	±5%	1
R15	RG6 8 2121 JA000	Chip	6.8kΩ	1/8W	±5%	1
R16	RG3 6 1121 JA000	Chip	360Ω	1/8W	±5%	1
R17	RG1 0 2121 JA000	Chip	1kΩ	1/8W	±5%	1
R18	RG1 0 2121 JA000	Chip	1kΩ	1/8W	±5%	1
R19	RG9 1 2121 JA000	Chip	9.1kΩ	1/8W	±5%	1
R20	RG4 7 0121 JA000	Chip	47Ω	1/8W	±5%	1
R21	RG2 2 0121 JA000	Chip	22Ω	1/8W	±5%	1
R22	RP1 0 2121 JV000	Pretty Carbon	1kΩ	1/8W	±5%	1
R101	RP3 3 2121 JV000	Pretty Carbon	3.3kΩ	1/8W	±5%	1
R102	RG1 0 2121 JA000	Chip	1kΩ	1/8W	±5%	1
R103	RG3 9 2121 JA000	Chip	3.9kΩ	1/8W	±5%	1
R104	RP4 7 4121 JV000	Pretty Carbon	470kΩ	1/8W	±5%	1
R105	RP1 0 1121 JV000	Pretty Carbon	100Ω	1/8W	±5%	1
R106	RP3 9 2121 JV000	Pretty Carbon	3.9kΩ	1/8W	±5%	1
R107	RG1 0 1121 JA000	Chip	100Ω	1/8W	±5%	1
R108	RP4 7 3121 JV000	Pretty Carbon	47kΩ	1/8W	±5%	1
R109	RP5 6 2121 JV000	Pretty Carbon	5.6kΩ	1/8W	±5%	1
R110	RP5 6 2121 JV000	Pretty Carbon	5.6kΩ	1/8W	±5%	1
R111	RP3 9 2121 JV000	Pretty Carbon	3.9kΩ	1/8W	±5%	1
R112	RP3 3 2121 JV000	Pretty Carbon	3.3kΩ	1/8W	±5%	1
R113	RG1 5 3121 JA000	Chip	15kΩ	1/8W	±5%	1
R114	RP5 6 2121 JV000	Pretty Carbon	5.6kΩ	1/8W	±5%	1
R115	RG1 5 2121 JA000	Chip	1.5kΩ	1/8W	±5%	1
R116	RP1 0 4121 JV000	Pretty Carbon	100kΩ	1/8W	±5%	1
R117	RP4 7 3121 JV000	Pretty Carbon	47kΩ	1/8W	±5%	1
R118	RP4 7 2121 JV000	Pretty Carbon	4.7kΩ	1/8W	±5%	1
R119	RG3 3 3121 JA000	Chip	33kΩ	1/8W	±5%	1
R120	RG3 9 2121 JA000	Chip	3.9kΩ	1/8W	±5%	1
R121	RG4 7 0121 JA000	Chip	47Ω	1/8W	±5%	1
R122	RG4 7 0121 JA000	Chip	47Ω	1/8W	±5%	1
R123	RG2 2 1121 JA000	Chip	220Ω	1/8W	±5%	1
R126	RP1 8 3121 JV000	Pretty Carbon	18kΩ	1/8W	±5%	1
R127	RP3 3 1121 JV000	Pretty Carbon	330Ω	1/8W	±5%	1
R128	RG8 2 3121 JA000	Chip	82kΩ	1/8W	±5%	1
R201	RP3 3 2121 JV000	Pretty Carbon	3.3kΩ	1/8W	±5%	1
R202	RG1 0 2121 JA000	Chip	1kΩ	1/8W	±5%	1
R203	RG3 9 2121 JA000	Chip	3.9kΩ	1/8W	±5%	1
R204	RG4 7 4121 JA000	Chip	470kΩ	1/8W	±5%	1
R205	RP1 0 1121 JV000	Pretty Carbon	100Ω	1/8W	±5%	1
R206	RP3 9 2121 JV000	Pretty Carbon	3.9kΩ	1/8W	±5%	1
R207	RP1 0 1121 JV000	Pretty Carbon	100Ω	1/8W	±5%	1
R208	RP4 7 3121 JV000	Pretty Carbon	47kΩ	1/8W	±5%	1
R209	RG5 6 2121 JA000	Chip	5.6kΩ	1/8W	±5%	1
R210	RG5 6 2121 JA000	Chip	5.6kΩ	1/8W	±5%	1
R211	RG3 9 2121 JA000	Chip	3.9kΩ	1/8W	±5%	1
R212	RP3 3 2121 JV000	Pretty Carbon	3.3kΩ	1/8W	±5%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
R213	RG1 5 3121 JA000	Chip	15kΩ	1/8W	±5%	1
R214	RP5 6 2121 JV000	Pretty Carbon	5.6kΩ	1/8W	±5%	1
R215	RG1 5 2121 JA000	Chip	1.5kΩ	1/8W	±5%	1
R216	RP1 0 4121 JV000	Pretty Carbon	100kΩ	1/8W	±5%	1
R217	RP4 7 3121 JV000	Pretty Carbon	47kΩ	1/8W	±5%	1
R218	RP4 7 2121 JV000	Pretty Carbon	4.7kΩ	1/8W	±5%	1
R219	RG3 3 3121 JA000	Chip	33kΩ	1/8W	±5%	1
R220	RG3 9 2121 JA000	Chip	3.9kΩ	1/8W	±5%	1
R221	RG4 7 0121 JA000	Chip	47Ω	1/8W	±5%	1
R222	RG4 7 0121 JA000	Chip	47Ω	1/8W	±5%	1
R223	RG2 2 1121 JA000	Chip	220Ω	1/8W	±5%	1
R224	RG8 2 2121 JA000	Chip	8.2kΩ	1/8W	±5%	1
R225	RG4 7 3121 JA000	Chip	47kΩ	1/8W	±5%	1
R226	RG1 8 3121 JA000	Chip	18kΩ	1/8W	±5%	1
R227	RP3 3 1121 JV000	Pretty Carbon	330Ω	1/8W	±5%	1
R228	RG8 2 3121 JA000	Chip	82kΩ	1/8W	±5%	1
R301	RG2 2 5121 JA000	Chip	2.2MΩ	1/8W	±5%	1
R302	RG1 0 0121 JA000	Chip	10Ω	1/8W	±5%	1
R303	RG6 8 3121 JA000	Chip	68kΩ	1/8W	±5%	1
R304	RG3 9 4121 JA000	Chip	390kΩ	1/8W	±5%	1
R305	RS6 8 1620 KT000	Micro	680Ω	1/16W	±10%	1
R306	RG4 7 0121 JA000	Chip	47Ω	1/8W	±5%	1
R307	RP1 0 2121 JV000	Pretty Carbon	1kΩ	1/8W	±5%	1
R308	RG4 7 1121 JA000	Chip	470Ω	1/8W	±5%	1
R309	RG6 8 0121 JA000	Chip	68Ω	1/8W	±5%	1
R310	RG3 3 3121 JA000	Chip	33kΩ	1/8W	±5%	1
R311	RG6 8 0121 JA000	Chip	68Ω	1/8W	±5%	1
R312	RG1 5 1121 JA000	Chip	150Ω	1/8W	±5%	1
R313	RG2 7 1121 JA000	Chip	270Ω	1/8W	±5%	1
R314	RP3 9 2121 JV000	Pretty Carbon	3.9kΩ	1/8W	±5%	1
R315	RG1 2 2121 JA000	Chip	1.2kΩ	1/8W	±5%	1
R316	RG4 7 1121 JA000	Chip	470Ω	1/8W	±5%	1
R317	RP3 3 1121 JV000	Pretty Carbon	330Ω	1/8W	±5%	1
R318	RP3 9 4121 JV000	Pretty Carbon	390kΩ	1/8W	±5%	1
R319	RG1 0 2121 JA000	Chip	1kΩ	1/8W	±5%	1
R320	RP4 7 2121 JT000	Pretty Carbon	4.7kΩ	1/8W	±5%	1
R321	RP1 3 3121 JZ000	Pretty Carbon	13kΩ	1/8W	±5%	1
R322	RP1 2 3121 JT000	Pretty Carbon	12kΩ	1/8W	±5%	1
R323	RP2 7 3121 JT000	Pretty Carbon	27kΩ	1/8W	±5%	1
R324	RP8 2 1121 JT000	Pretty Carbon	820Ω	1/8W	±5%	1
R325	RP4 7 2121 JT000	Pretty Carbon	4.7kΩ	1/8W	±5%	1
R326	4 2219 70220	Resistor 680	680Ω	1/4W	±5%	1
R327	RG1 0 2121 JA000	Chip	1kΩ	1/8W	±5%	1
R328	RG1 0 0121 JA000	Chip	10Ω	1/8W	±5%	1
R329	RP1 8 1121 JT000	Pretty Carbon	180Ω	1/8W	±5%	1

VOLUME CONTROL P.C.B. ASSY

Ref. No.	Part No.	Description				Q'ty
PCB2	4 2229 73404	Volume Control P.C.B. Assy				1
	4 2269 37660	PCB, Volume Control				1
S1	4 2319 75650	Slide Switch (Band Select)				1
VR1	4 2229 73403	Volume Control (C-20kΩ)				1
VR2	4 2229 73691	Volume Control (C-20kΩ)				1
D2	202 5 3160 00110	Diode, GMA-01				1
D5	202 5 3160 00110	Diode, GMA-01				1
C116	CG2 7 3250 KH00A	Chip	0.027μF	25V	±10%	1
C216	CG2 7 3250 KH00A	Chip	0.027μF	25V	±10%	1

LED INDICATOR P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
PCB3	4 2029 70533	LED Indicator P.C.B. Assy	1
	4 2269 37670	PCB, LED	1
D301	4 2029 70530	LED, SLP-114B (FM Stereo)	1
D302	4 2029 70530	LED, SLP-114B (Record/Battery)	1

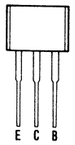
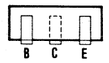
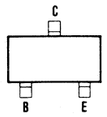
SWITCH P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
PCB4	4 2319 75651	Switch P.C.B. Assy	1
	4 2269 37680	PCB, Switch	1
S5	4 2319 75650	Slide Switch (Tape Speed/Beat Cancel)	1

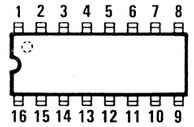
NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

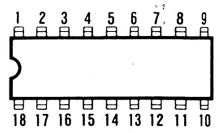
IC & TRANSISTOR LEAD IDENTIFICATION

TRANSISTOR	FRONT VIEW	BOTTOM VIEW
2SA608 2SC536 2SC693 2SC2786 2SC2999		
2SA1179 2SD1048		
TERMINAL NAME		
B→ BASE C→ COLLECTOR E→ EMITTER		

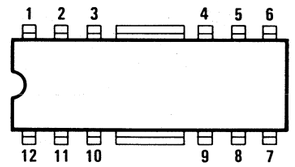
LA3361 BOTTOM VIEW



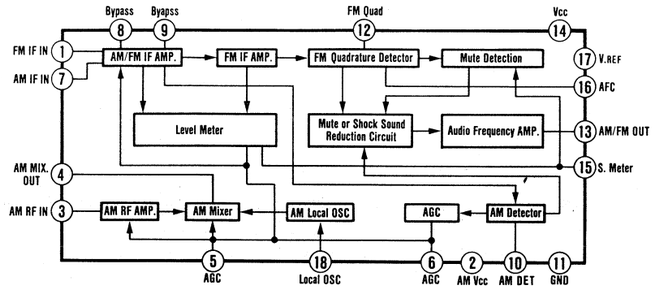
AN7223 BOTTOM VIEW



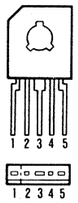
LA4190 BOTTOM VIEW



AN7223 BLOCK DIAGRAM

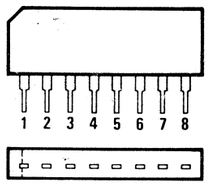


LA5522 FRONT VIEW



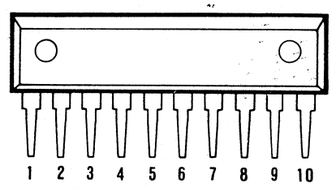
BOTTOM VIEW

AN7216 FRONT VIEW



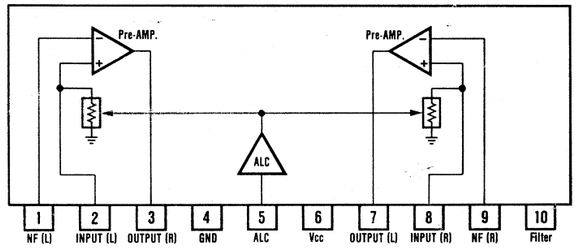
BOTTOM VIEW

M51544L FRONT VIEW

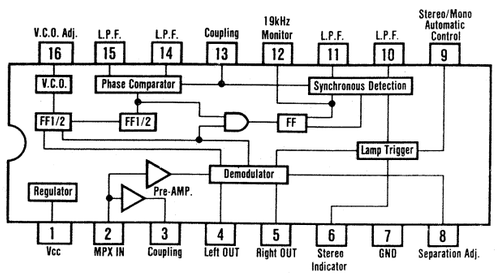


BOTTOM VIEW

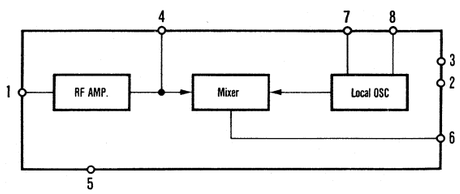
M51544L BLOCK DIAGRAM



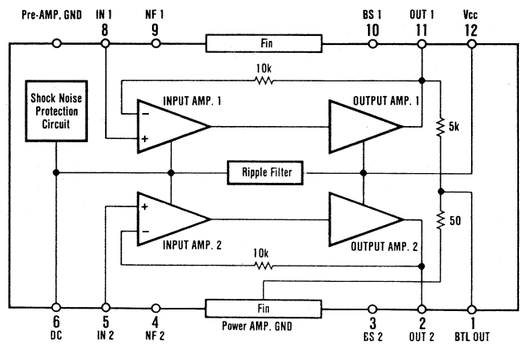
LA3361 BLOCK DIAGRAM



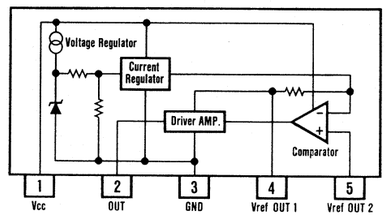
AN7216 BLOCK DIAGRAM



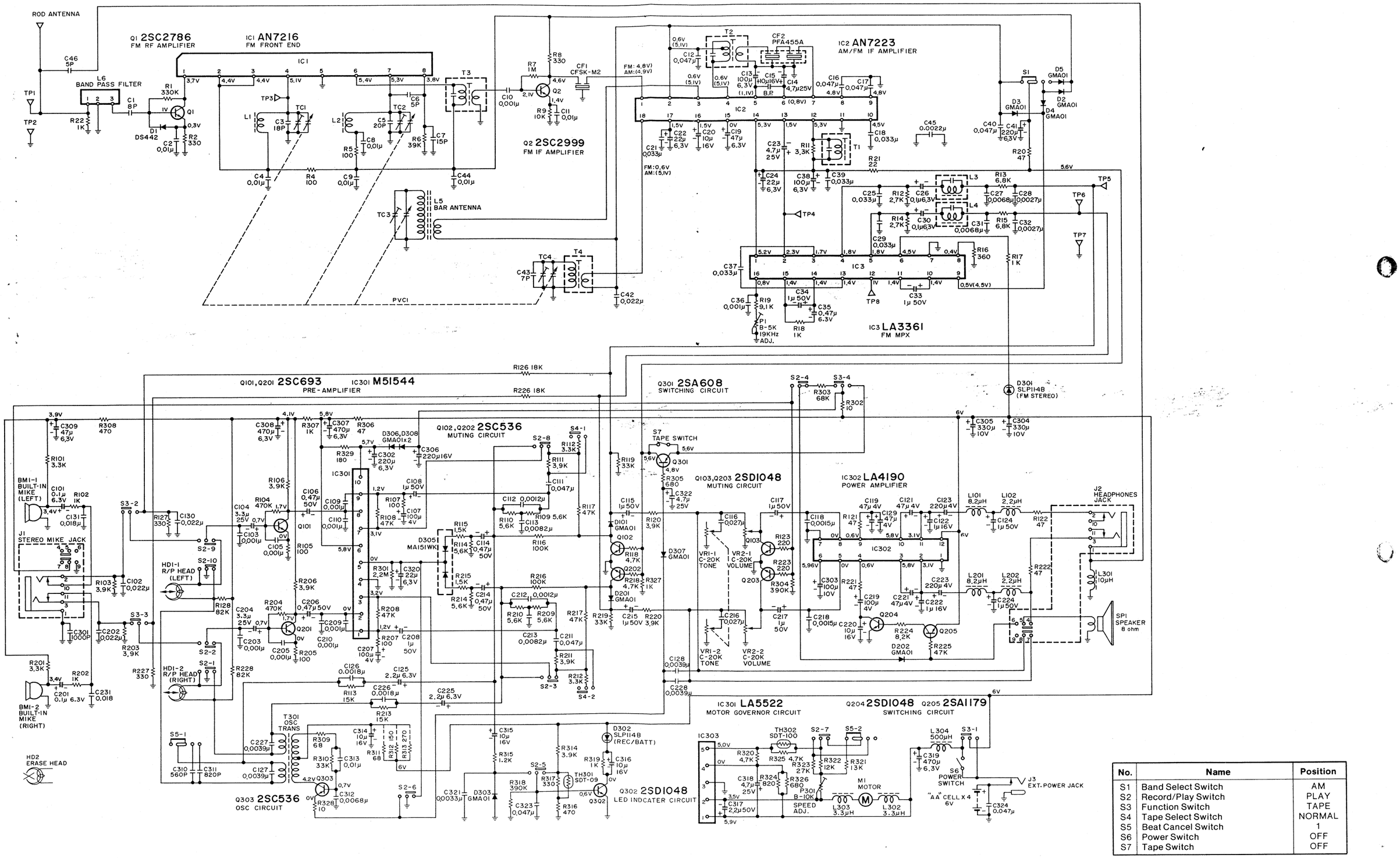
LA4190 BLOCK DIAGRAM



LA5522 BLOCK DIAGRAM

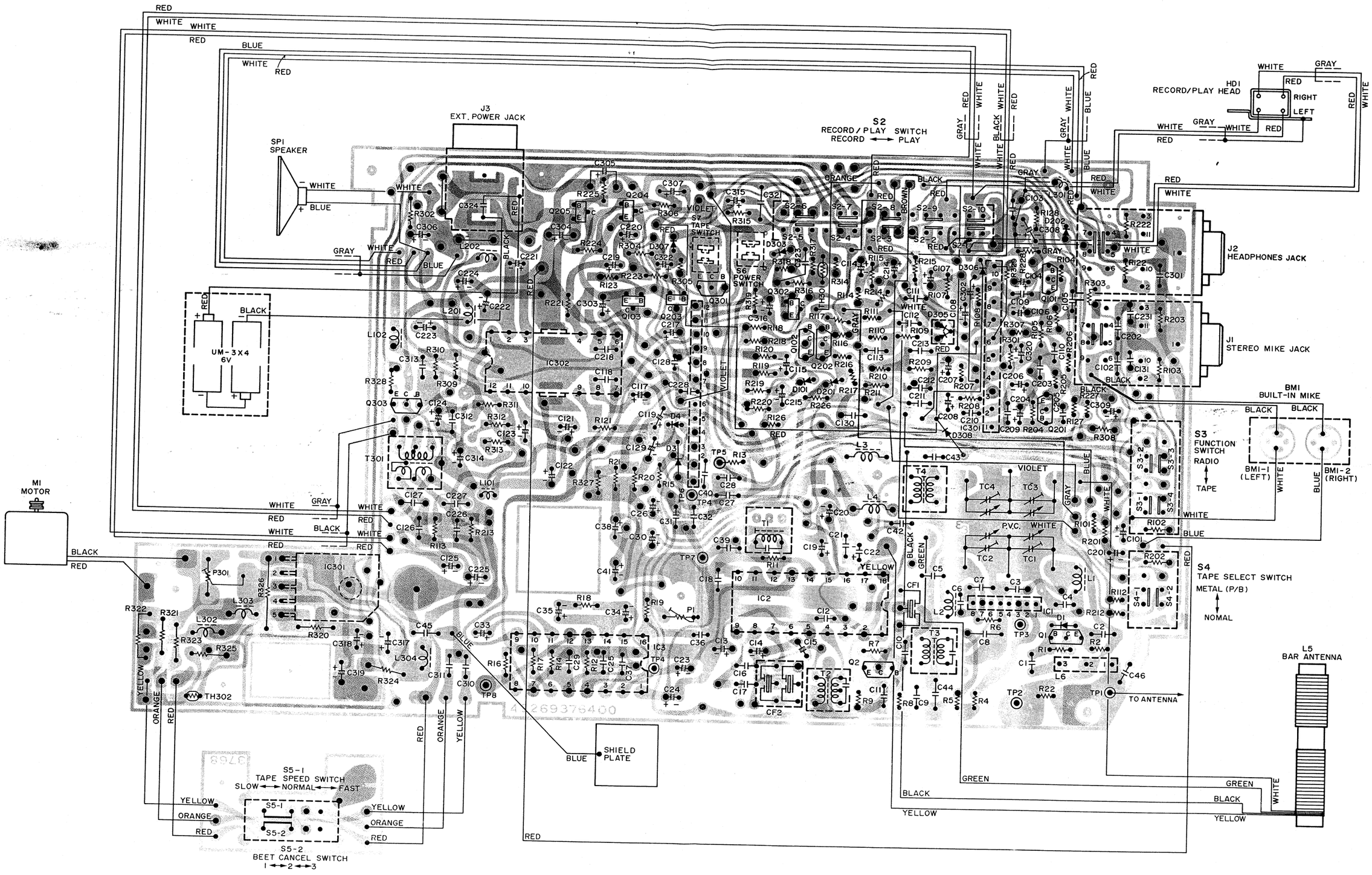


SCHEMATIC DIAGRAM



No.	Name	Position
S1	Band Select Switch	AM
S2	Record/Play Switch	PLAY
S3	Function Switch	TAPE
S4	Tape Select Switch	NORMAL
S5	Beat Cancel Switch	1
S6	Power Switch	OFF
S7	Tape Switch	OFF

AMPLIFIER/RADIO TUNER P.C.BOARD



VOLUME LED P.C.BOARD